

DESCRIPTION OF THE MALE OF *Candonocypris assimilis*
G.O. SARS 1894 (CYPRIDAE, OSTRACODA)

By S. U. HUSSAINY

Department of Zoology, Monash University, Clayton, Victoria 3168

Abstract

The adult male of *Candonocypris assimilis* is described, and the generic and specific descriptions are revised. The associated fauna and flora are noted.

Introduction

During a limnological investigation of some lakes in the western district of Victoria, specimens of *Candonocypris assimilis* G. O. Sars (1894) were collected from Lake Purrumbete, a volcanic maar about 10 km east of Camperdown, Victoria, Australia. The sex ratio in about 1,000 specimens was 1:1. Sars described this species on the basis of females developed from dried mud taken from lagoons in the neighbourhood of Duncedin in New Zealand. In describing the genus *Candonocypris*, he stated that 'propagation is exclusively parthenogenetical'. Similarly, Chapman (1963), who reviewed the ostracod fauna of New Zealand, also mentioned only the presence of females. In Australia, this genus is widely distributed in fresh-water ponds and lagoons (McKenzie and Gill 1968), but this is the first record of the species in this country.

The present paper describes the male. Specimens were dissected in 70% alcohol, cleared and mounted in polyvinyl alcohol, with chlorazol black as a stain. Figures 1-16 were prepared using a camera lucida. Material has been deposited in the National Museum of Victoria, Melbourne, Reg. No. J-193. More than 30 specimens were examined, but all the drawings were made from two specimens.

Description of Male

Males are smaller than females. The length of the male is 1.24 mm whereas the length of the female is 1.60 mm. The carapace is rather oblongreniform in shape, the height about the same anteriorly as posteriorly, and not attaining half the length. The dorsal margin is very slightly and evenly curved, whereas the ventral one exhibits a distinct sinus about the middle. The anterior extremity is more rounded than the posterior one (Fig. 1 and 2).

The valves are unequal, anteriorly the right one overlaps the left by a projecting border defined from the inner duplicature by an elevated ridge (Fig. 1). Posteriorly, on the other hand, no projecting border could be seen when viewed from the left side. The right valve measures 1.24 mm in length and the left valve 1.19 mm. The height of the valve is 0.59 mm.

The shell surface is smooth and polished, carrying at each end delicate hairs projecting beyond the edges (Fig. 2). The muscle scars are very conspicuous and occur considerably in front of the middle of each valve. They are seven in number (Fig. 3). The shell colour is much darker and more fuscous than in the female. Along the sides, behind the muscular pits, obliquely diagonal bands divided in the



FIG. 1-16—(1) Right valve anterior portion enlarged, view from inside; (2) Left valve seen from inside; (3) Muscle scars; (4) Antenna; (5) Mandible; (6) Antennule; (7) Maxilla; (8) Branchial plate of maxilla; (9) Maxilla 2; (10) Thoracic leg 1; (11) Thoracic leg 2; (12) Furca; (13) Genital organ; (14) Zenker's organ; (15) Upper lip; (16) Hypostome showing rake-shaped organ.

middle by narrow stripes are seen. The eye is well developed and easily seen in living specimens.

The several appendages (Fig. 4-11) do not significantly differ in their structure from those of *C. candanoides* (King 1885), the type species, as is the case with other species of this genus.

The caudal ramus (Fig. 12) is rather slender and somewhat attenuated distally, being nearly straight. There are two claws and two setae, both claws are pectinate.

The male ejaculatory duct (Zenker's organ) (Fig. 13) has about 24 chitinous rosettes. The genital organ (Fig. 14) is broad and bilobed anteriorly and measures 0.34 mm in length.

Discussion

Females from the present collections agreed with Sars's description of *C. assimilis* in their size, shape, colour, muscle scar of carapace, natatory setae on the second antennae, and in the shape of the furca. On this basis it is considered that the males present are those of *C. assimilis*. No other species of this genus is known from this locality.

Sars in giving the generic description stated that the 'propagation is exclusively parthenogenetical'. The present record of males warrants deletion of this statement from the generic description. To this description may now be added the fact that the males are smaller than females, and their carapace is more evenly rounded anteriorly than posteriorly. Also the males are much darker and more fuscous than the females, and the olivaceous colour which is fairly common in females is absent in males. The same modification applies to the species diagnosis.

In addition to the present species four more have been described, namely *C. candanoides* (King), *C. bicornis* G. W. Müller, *C. voeltzkowi* G. W. Müller and *C. fitzroyi* McKenzie.

Ecology

Lake Purrumbete is a volcanic maar in the western district of Victoria. The water is fresh, the total dissolved solids varying from 419 to 430 ppm. The annual temperature varies from 10-20°C.

C. assimilis is endobenthic in habit, being found in large numbers in the littoral regions of the lake. The associated microcrustacean fauna includes *Newhamia fenestrata* King, *Cyprretta viridis* King, *Diacypris* sp., *Cypridopsis* sp., *Gomphocythere* sp., *Macrothrix spinosa* King, and *Microcyclops* sp.

The known distribution of *C. assimilis* covers New Zealand and Australia. In New Zealand it has been recorded from Lagoons near Dunedin, Duntroon, Awakino Gorge, Swampy Creek and Pyramid Valley. In Australia, Lake Purrumbete is the only known locality for *C. assimilis*.

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References

- CHAPMAN, A., 1963. A review of the freshwater Ostracoda of New Zealand. *Hydrobiologia* 22: 1-40.
- McKENZIE, K. G., & GILL, E., 1968. Ostracoda from the Murray River Valley west of Wentworth, N.S.W. *Aust. J. Sci.* 30: 463-4.
- SARS, G. O., 1894. Contribution to a knowledge of freshwater Entomostraca of New Zealand as shown by artificial hatching of dried mud. *Forh. Vidensk. Selsk. Krist.* 5: 1-62.